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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/179,872	10/28/1998	PAN-JIN KIM	1317.1055/MD	6192

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EXAMINER	
BROWN, RUEBEN M	
ART UNIT	PAPER NUMBER
2623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/179,872	KIM ET AL.	
	Examiner	Art Unit	
	REUBEN M. BROWN	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-8,10-14,17,18,23,24 and 27-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-8,10-14,17,18,23,24 and 27-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Vancelette clearly teaches that a plurality of related audio/video programs may be grouped together by a content provider or at a headend and transmitted within the same RF channel as a primary channel, (col. 6, lines 1-36; col. 7, lines 25-42; col. 11, lines 1-7). This technology has the advantage of allowing the subscriber to access a plurality of related programs (such as a plurality of programs that carry different camera angles from a sporting event) within the same RF channel, see col. 3, lines 35-52 & col. 5, lines 21-45. Vancelette goes on to teach that the headend may alternatively group together different service providers (that have related content) to be transmitted on the same RF channel, (col. 7, lines 42-53; col. 12, lines 21-28). Again, this technology allows the subscriber to access all of the available related programming using a single graphical interface, see col. 7, lines 5-57.

However, Vancelette does not explicitly discuss that the alternate video programs are presented to the viewer as channels, even though it is taught that the viewer is provided with "an interactive graphical display that informs the user of the available options", col. 5, lines 21-25.

Therefore, it would have been obvious to present the alternate video programs to the viewer as sub-channels to the primary channel, as taught by Kim.

Applicant argues on page 9 that the main channel CH0 in Kim means a relatively larger image being displayed with alternate sub-channels CH1, CH2, CH3, which are locally generated images. First of all, there is nothing in Kim that suggest that the content of CH0, CH1, CH2, CH3 are merely locally generated images, instead of being transmitted together as a main channel CH0, along with its sub-channels CH1, CH2 & CH3. Applicant appears to argue that the sub-channels in Kim are unrelated. However, examiner does not find any disclosure in Kim that supports such an assertion.

As for the discussion of the minor channels being received thru the demanded main channel, as pointed out above, Vancelette provides a disclosure that reads on this claimed technology. Kim is silent as to whether the sub-channels are received thru the main channel CH0 or if they are all separately transmitted. Nevertheless the reference is applicable to Vancelette, as it is disclosed, "This means that the alternate signal, such as an audio/video signal can be found by the viewer at the same channel as the primary channel...The viewer, who has come to associate "channel 10" with "network X" **therefore he knows that he is still viewing programs of network X**, even though he has the opportunity to view and listen to a number of alternate video/audio selections", emphasis added, col. 4, lines 1-15.

The viewer in Vancelette knows that he is looking at programs from Network X, when viewing the alternate programs. So one of ordinary skill in the art would have readily recognized the benefit of more explicitly showing the viewer the channel number associated with the alternate audio/video programs selections, as provided by Kim, at least in order to avoid confusion.

Applicant argues on page 8 that, "…VSYNC and HSYNC are terminologies used with analog TV reception and display but not used in digital TV reception & display, and further not used with regard to digital channel numbers display". This point is moot, since as pointed out in the rejection below, Vancelette teaches digital multi-channel TV broadcasting system that transmits digital programming to digital receiver, see (col. 6, lines 12-24; col. 8, lines 32-45; col. 8, lines 59-66 thru col. 9, lines 1-11). The Han reference teaches receiving either an analog or digital signal and processing both according to their native protocol, which takes advantage of the benefits of digital television signals , as taught by Han, Para [0028].

Regarding applicant's discussion of the rejection of claims 4-6, examiner does not assert that Etheredge teaches hiding the minor channel numbers. It is argued that the combination of Etheredge teaching of removing or hiding an interactive element or icon after it has not been used for a certain amount of time. Therefore, this combination with Vancelette & Kim, provides for hiding any interactive element, including a channel number, if it has been not been active for a certain period of time.

Regarding claim 12, applicant is correct in that Keenan is directed to the wrap-around technology. It is asserted ha the wrap-around technology; in combination with teachings of Vancelette & Kim does reads on the claimed subject matter.

Applicant's request support for the Official Notice, taken with respect to claim 23. Examiner took Official Notice of fact that it was well known in the art of interactive TV for a user to select one of a plurality of thumbnails and subsequently have the associated video take up the entire screen. Support is found in Duhault, (Fig. 2; Fig. 5 & col. 5, lines 51-60).

In particular, the reference teaches a screen of a plurality of thumbnails representing selectable programming channels. Duhault goes on to teach the user may choose the full display option wherein a selected channel is displayed on the entire screen, which meets the claimed subject matter.

Applicant's request support for the Official Notice, taken with respect to claim 28. Examiner took Official Notice of fact that it was old in the art to display channel numbers automatically upon selection. Support is found in Landis (col. 4, lines 51-60; Fig. 2 & Fig. 6). The cited passage in the reference teaches that when a new channel is selected, its corresponding channel is automatically displayed.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 7-8, 10-11, 13, 17-18, 23-24 & 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vancelette, (U.S. Pat # 5,894,320), in view of Kim, (U.S. Pat # 5,838,386) & Han, (US PG-PUB 2003/0067555).

Considering claims 1 & 7, the amended claimed method for displaying channel information on a digital TV for receiving digital multichannel TV broadcasting, comprising

'changing a current channel to a demanded major channel in response to a demand to change a major channel', is met by the disclosure of Vancelette that teaches a customer selecting a primary channel, which is transmitted/delivered on a particular RF channel, see col. 10, lines 21-35.

'displaying on the TV screen, minor channel numbers of programs received through the demanded major channel', Vancelette teaches that a plurality of minor channels may be received through a primary channels, col. 4, lines 6-15; col. 6, lines 5-50; col. 7, lines 25-67. Even though

Vancelette discloses that the user is enabled to choose from a plurality of minor channels, see col. 6, lines 1-15, the reference does not discuss displaying the channel numbers of the alternate programming for the viewer.

Kim provides a teaching wherein on on-screen display (Fig. 6) shows the result of a user selection of a main channel, CH0. The TV screen simultaneously displays the three sub-channels CH1, CH2 & CH3, respectively, associated with the instant demanded main channel, CH0, see col. 6, lines 12-31. It would have been obvious for one ordinary skill in the art at the time the invention was made, to modify Vancelette to show the channel numbers of the instant alternate video programs at least to keep the user informed which channel is which, and thus avoid confusion.

As for the specifics of displaying the channel number on a '*digital television screen*', Vancelette appears to operate by converting the digital TV signal to an analog signal, and Kim does not explicitly discuss the use of a digital TV system/screen. Nevertheless, Han teaches a dual receiver system that receives/processes HDTV (i.e., digital signals), as well as NTSC (i.e., analog signals), Abstract. It is taught that HDTV is beneficial to NTSC, since more programs may be received over the same RF channel, Para [0028]. It would have been obvious for one ordinary skill in the art at the time the invention was made, to modify Vancelette to provide for processing and displaying the HDTV signal as a digital TV signal, as taught by Han at least for the known advantage that digital TV signals gave a higher image quality than analog TV signals.

Considering claim 8, the claimed subject matter reads on Kim, Fig. 6, wherein the minor channels are displayed on the screen from top to bottom.

Considering claim 10, the instant claim reads on displaying the TV programs from the channels of the lowest minor channel number, after the instant channel is selected, which is necessarily included in Kim.

Considering claims 11 & 13; Kim provides the user with the option to select one or more of the sub-channels, CH1, CH2 or CH3.

Considering claims 17-18 & 24, the claimed apparatus and device for displaying channel information on a digital TV, comprising elements that correspond with subject matter mentioned above in the rejection of claim 1, are likewise treated.

Regarding the additional features recited in claim 18, 'wherein the display displays minor channel numbers and the major channel number simultaneously in a format of X, X-1, X-2…X-n, wherein X is the major channel number and 1,2…n are the minor channel numbers, and n is the highest minor channel number', is also met by the disclosure of Fig. 6, which displays main and sub-channels, using the syntax, CH0, CH1, CH1 & CH3.

Considering claim 23, Official Notice is taken that at the time the invention was made, it was well known in the art of interactive TV for a user to select one of a plurality of thumbnails

and subsequently have the associated video take up the entire screen. It would have been obvious for one ordinary skill in the art at the time the invention was made, to operate Kim so that when a user selects one of the sub-channel, the associated video would fill the entire TV screen, since the user would generally be more interested in paying attention to the programming that has been selected, than being distracted by un-selected programming.

Considering claim 27, both Kim & Vancelette operate outside of an EPG environment.

Considering claim 28, even though Kim does not explicitly state that the channel numbers are displayed automatically, Official Notice is taken that at the time the invention was made, it was old in the art to display channel numbers automatically upon selection. It would have been obvious for one ordinary skill in the art at the time the invention was made, to operate Kim in a manner wherein the major and/or sub-channel numbers are displayed automatically upon selection, at least for the improvement of avoiding the user having to manually choose to display the channel numbers.

Considering claims 29 & 30, Vancelette teaches that the plurality of digital channels are multiplexed together and modulated on a single RF channel, col. 8, lines 21-45, which meets the claimed subject matter.

5. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vancelette, Kim & Han, further in view of Etheredge, (U.S. Pat # 6,172,674).

Considering claims 4 & 6, Kim does not teach hiding the major or minor channel numbers after a prescribed time has elapsed. Nevertheless, Etheredge provides a disclosure of removing a particular pop-menu that has been activated by the user, after a certain time, if a channel selection or menu item selection has not been made, (col. 13, lines 26-50; col. 14, lines 4-40; col. 15, lines 10-25). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Kim with the technology taught by Etheredge, at least for the known advantage of reducing the amount of extraneous information displayed to the viewer, since after a certain amount of time it may be assumed that the viewer is no longer interested in making a channel change from the menu displayed on the TV screen.

Considering claim 5, Kim provides for the user to select a sub-channel for display.

6. Claims 12 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vancelette, Kim & Han, in view of Keenan, (U.S. Pat # 5,161,023).

Considering claim 12, the instant claimed feature reads on an endless loop operation such that once the user gets to the top of a list of programs, the next program to be highlighted (selected), would be the program at the bottom of the list, and vice versa. Keenan (col. 1, lines 51-59) discloses such a technology. It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Kim, with the known technology of 'wrap around' lists as taught by Keenan (Fig. 3A; col. 3, lines 40-52), at least for the desirable purpose

of avoiding the user having to move the cursor in the other direction in order to reach the opposite extreme of the instant list, which would be burdensome on the user, at least in the case of long lists of programs.

Considering claim 14, as discussed above in the analysis of claim 12, it would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Kim with the well known 'wrap around' technology disclosed in Keenan (Fig. 3A). However, claim 14 requires the additional step that a user is automatically connected to a succeeding or preceding list of minor channels, depending on whether the user's cursor is currently selecting the highest minor channel or lowest minor channel, respectively of the currently active minor channel list. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify the combination of Kim & Keenan to move to a next list of channels, at least for the desirable advantage of avoiding the user having to manually select the next list of channels.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) Bestler Teaches a Hybrid HDTV & NTSC TV receiver system.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any response to this action should be mailed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

or faxed to:
(571) 273-8300, (for formal communications intended for entry)
Or:
(571) 273-7290 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reuben M. Brown whose telephone number is (571) 272-7290. The examiner can normally be reached on M-F(8:30-6:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (571) 272-7331. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications and After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Chris Kelley/
Supervisory Patent Examiner, Art Unit 2623